



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION IX**  
**75 Hawthorne Street**  
**San Francisco, CA 94105**

June 22, 2017

Derek J. Robinson, BRAC Environmental Coordinator  
Department of the Navy  
Base Realignment and Closure Program Management Office West  
33000 Nixie Way, Building 50  
San Diego, CA 92147

Re: EPA Comments on the Draft Technical Memorandum on the Optimized Remedial  
Alternative for Parcel F, Hunters Point Naval Shipyard, San Francisco, California, May  
2017

Dear Mr. Robinson:

Attached are EPA's comments on the Draft Technical Memorandum on the Optimized Remedial  
Alternative for Parcel F, Hunters Point Naval Shipyard, San Francisco, California dated May  
2017.

If you have any questions, please do not hesitate to call me at (415) 972-3681 or e-mail me at  
huang.judy@epa.gov.

Sincerely,

A handwritten signature in black ink, reading "Judy C. Huang", is positioned above the typed name and title.

Judy C. Huang, P.E.  
Remedial Project Manager

cc:

Nina Bacey, DTSC via email  
Tina Low, RWQCB via email  
Amy Brownell, SFDPH via email  
Sharon Ohannessian, US Navy via email

**Review of the Draft Technical Memorandum on the Optimized Remedial Alternative for  
Parcel F, Hunters Point Naval Shipyard, San Francisco, California, May 2017**

**GENERAL COMMENTS**

1. Section 3.3.2 (KCH Pilot Study) indicates that the pilot study will continue to monitor the degree of mixing following placement of AquaGate™+PAC and SediMite™; however, it is unclear how the pilot study results will be incorporated into the optimized remedial alternative for Parcel F. Based on Section 4.1 (Remedial Technologies Applicable to Areas III, IX, and X) of the Technical Memorandum on the Optimized Remedial Alternative for Parcel F, Hunters Point Naval Shipyard, San Francisco, California (Tech Memo), the in situ treatment component of the optimized remedial alternative for Parcel F includes placement of granular activated carbon (GAC) using a commercially available product such as AquaGate™+PAC or SediMite™. Given that the Tech Memo does not discuss how the results of the pilot study will be incorporated and carried forward into the optimized remedial alternative, please revise the Tech Memo to discuss how this data will be incorporated, including when pilot study results will be available.
2. Section 1.0 (Purpose and Introduction) states, “A comparative analysis of the optimized alternative relative to the other six Area IX/X alternatives developed in the FFS [Final Feasibility Study for Parcel F, Hunters Point Shipyard, San Francisco, CA, dated April 30, 2008] will be provided in the upcoming Proposed Plan;” however, it is unclear why a comparative analysis of alternatives was not included in the Tech Memo. As noted in Section 6.2.6 (Presentation of Comparative Analysis) of the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, EPA/540/G-89/004, dated October 1988 (RI/FS Guidance), “The comparative analysis should include a narrative discussion describing the strengths and weaknesses of the alternatives relative to one another with respect to each criterion.” The upcoming Proposed Plan is not the appropriate place to introduce a comparative analysis of alternatives because the Proposed Plan will not provide sufficient detail to explain this analysis. Please revise the Tech Memo to include a comparative analysis of alternatives including the optimized remedial alternative for Parcel F.
3. Section 4.1 (Remedial Technologies Applicable to Areas III, IX, and X) indicates that a 90 percent (%) reduction in surface sediment concentration is assumed to be a conservative estimate of post-remedial action sediment concentrations, but it is unclear why the 81% reduction observed during the KCH Pilot Study is not utilized rather than the 90% value gleaned from a literature review. Using data from Parcel F would provide a more conservative estimate than the literature review value. Also, the thickness of the sand mixed with carbon-based amendments is based on this 90% reduction in surface sediment concentrations value. Please revise the Tech Memo to clarify why the 90% reduction in surface sediment concentration associated with the placement of sand mixed with carbon-based amendments is utilized over the more conservative 81% reduction observed during the KCH Pilot Study at Parcel F.

4. Insufficient information is provided in the Tech Memo regarding the delineation of sediment exceeding the remedial action object (RAO) 1 preliminary remediation goal (PRG; i.e., intertidal sediment exceeding 700 micrograms per kilogram [ $\mu\text{g/kg}$ ]) for polychlorinated biphenyls (PCBs). Based on Section 4.3.3 (Refined Remedial Footprint for Area X), “[I]ntertidal sediment exceeding 700  $\mu\text{g/kg}$  will be removed followed by placement of backfill while subtidal sediments exceeding 700  $\mu\text{g/kg}$  will have in situ treatment with carbon-based amendments.” However, information regarding the delineation of sediments exceeding 700  $\mu\text{g/kg}$  is not provided and/or referenced. As such, it is unclear if the optimized remedial alternative for Parcel F is appropriately scoped and costed. Please revise the Tech Memo to clarify how sediment exceeding the RAO 1 PRG (i.e., intertidal sediment exceeding 700  $\mu\text{g/kg}$ ) will be delineated such that the optimized remedial alternative for Parcel F can be appropriately scoped and costed.
5. Section 4.3.4 (Area IX/X Removal Depth) states, “Based on information presented in the Parcel F FFS, sediments below 1 foot are expected to remain stable in the environment and would not be significantly affected by bioturbation, tides, or erosion from waves and currents generated during storm events;” however, insufficient information is presented in the Tech Memo to support this conclusion. Similarly, the Long-Term Effectiveness and Permanence subsection of Section 5.2 (Detailed Analysis of Optimized Alternative) indicates that, “Furthermore, based on information in the Parcel F FFS the deeper, unexcavated sediments in the removal zone are expected to be resistant to erosion even under high shear-stress conditions.” Given that the focus on sediment from 0 to 1 foot impacts the scope of the optimized remedial alternative for Parcel F, please revise the Tech Memo to provide and/or reference the information utilized to substantiate the conclusion that sediments below 1 foot are expected to remain stable in the environment and would not be significantly affected by bioturbation, tides, or erosion from waves and currents generated during storm events.
6. The presentation and discussion of short-term effectiveness in Section 5.2 (Detailed Analysis of Optimized Alternative) should include an estimate of the time the remedy would take to achieve RAOs. As a result, the timeframe to achieve RAOs is unclear and a comparison of alternatives based on short-term effectiveness cannot be conducted. Please revise the short-term effectiveness subsection of Section 5.2 to provide a timeframe to achieve RAOs for the optimized remedial alternative for Parcel F.
7. The Tech Memo does not include the estimated costs associated with the optimized remedial alternative for Parcel F. These costs are necessary to assess the remedial alternative in accordance with the RI/FS Guidance. For example, it is unclear what percentage of PCB-contaminated sediment was assumed to require thermal treatment; this should have been explained in the associated costing assumptions. This is of particular concern given the land ban for disposal of PCB-contaminated materials. Further, costs should not be introduced in a Proposed Plan, in part because the proposed plan format does not provide the details necessary for a comprehensive evaluation of costs and the underlying assumptions. Please revise the Tech Memo to include the estimated costs associated with the optimized remedial alternative for Parcel F.

8. Data and/or calculations to support Figures 4 [Reduction in HPNS Sediment PCB Level due to MNR (Area IX)] and 5 [Reduction in HPNS Sediment PCB Level due to MNR (Area X)] are not provided and/or referenced. According to Sections 4.3.2 (Refined Remedial Footprint for Area IX) and 4.3.3 (Refined Remedial Footprint for Area X), the results of the SEDCAM Model for Areas IX and X are presented in Figures 4 and 5, respectively. Please revise the Tech Memo to include data and/or calculations to support Figures 4 and 5.

## **SPECIFIC COMMENTS**

1. **Section 1.0, Purpose and Introduction, Page 1:** Section 1.0 states that constituents of concern (COCs) identified at the site are copper, lead, mercury, and total PCBs; however, Section 2.3 indicates that ecological COCs include copper, lead, mercury, and total PCBs while human health COCs are limited to PCBs based on the fish and shellfish consumption exposure pathway. Please revise Section 1.0 to clarify that there are ecological- and human health-specific COCs.
2. **Section 2.3, Preliminary Remediation Goals, Page 4 and Table 3, Preliminary Remediation Goal Summary:** The RAO 1 subsection of Section 2.3 and Table 3 assume that lead contamination will be addressed with the PCBs; however, if a carbon-based amendment (AquaBlok, AquaGate™+PAC or SediMite™) is utilized as part of the optimized remedial alternative, lead will not be addressed in that area. Further, as noted in the Alternative 3 – In Situ Stabilization and Institutional Controls subsection of Section 3.2, “The primary disadvantages of in situ treatment using carbon-based amendments are its limited effectiveness in treating metals and its lower effectiveness in areas exposed to strong currents and wave action because the efficacy of in situ treatment works best in low energy environments (ITRC 2014).” As such, it is unclear if the alternatives described in the Tech Memo will address the lead contamination in areas where carbon-based amendments will be used because the extent of lead contamination is not defined on any of the figures included in the Tech Memo. Please revise the Tech Memo to address lead contamination by defining the extent of contamination and establishing a numerical RAO so that the remedial progress can be assessed.
3. **Section 4.2.1, Sediment Concentration, Page 13:** The fourth sentence of this section states that “Based on a not to exceed PRG of 1,240 µg/kg for total PCBs and an expected 90 percent reduction in surface sediment concentration associated with the placement of sand mixed with carbon-based amendments, surface sediment containing total PCBs exceeding 1,240 µg/kg will be excavated.” However, the following sentence states that “The remaining contaminated sediment exceeding the not to exceed PRG of 1,240 µg/kg for total PCBs would be treated in situ or undergo MNR based on application of the “subsequent technology assignment factors.” The two sentences seem to be contradictory. Please 1) clarify if all sediment exceeding 1,240 µg/kg will be excavated and if so, how will the foot print be delineated, and 2) if the Navy does not intend to excavate all sediment exceeding the 1,240 µg/kg not to exceed PRG, please clarify how the excavation foot print will be determined, if there will be sediment exceeding 1,240 µg/kg be exposed to the environment post excavation, what management procedures will

be in place to minimize environmental impacts from these exposure, and why it is appropriate not to excavate sediment exceeding the “not to exceed PRG”.

4. **Section 4.3.2, Refined Remedial Footprint for Area IX, Page 16 and Section 4.3.3, Refined Remedial Footprint for Area X, Page 16:** It appears that text in these sections was not updated to reference Areas IX and X. The second paragraph of Section 4.3.2 states “The refined remedial footprint for Area III is based on the technology assignment framework presented in Section 4.2 and is considered sufficient for the FS level evaluation. However, the precise remedial footprint and application of remedial technologies will be finalized during remedial design.” It is unclear why Area III is referenced in a section regarding Area IX. Similar language regarding Area III is included in Section 4.3.3 rather than information regarding Area X. Please revise Sections 4.3.2 and 4.3.3 to include language regarding Areas IX and X rather than Area III.
5. **Section 4.3.3, Remedial Foot Print for Area X, Page 16:** The 3<sup>rd</sup> and 4<sup>th</sup> sentences of the first paragraph are inconsistent. The 3<sup>rd</sup> sentence states “intertidal sediment exceeding 700 µg/kg will be removed followed by placement of backfill while subtidal sediments exceeding 700 µg/kg will have in situ treatment with carbon-based amendments.” However, the 4<sup>th</sup> sentence states that the removal of subtidal sediment will be needed to reach the post construction surface sediment PCB sediment of 300 µg/kg.” Please clarify if the Navy intends to removal the intertidal sediment or subtidal sediment.
6. **Section 5.2, Detailed Analysis of Optimized Alternative, Page 20:** The Reliability of Controls section of the Long-Term Effectiveness and Permanence subsection of Section 5.2 indicates that institutional controls (ICs) and monitoring for natural recovery (MNR) are considered reliable methods for ensuring achievement of RAOs. Yet, it is unclear how ICs and MNR will ensure achievement of RAO 1 (i.e., risk from ingested doses of copper, lead, mercury, and PCBs if the surf scoters obtain more than 50 percent of the daily food intake). Specifically, it is unclear how ICs and MNR will prevent surf scoters from accessing sediments. Please revise Section 5.2 to clarify how ICs and MNR will prevent surf scoters from accessing sediments and thereby achieving RAO 1.
7. **Section 5.2, Detailed Analysis of Optimized Alternative, Page 20:** The Resiliency section of the Long-Term Effectiveness and Permanence subsection of Section 5.2 indicates that continuous climate change monitoring can be performed to periodically re-evaluate the sediment remediation system’s vulnerability to climate change impacts but it does not clarify if this monitoring will occur as part of the optimized remedial alternative for Parcel F. Similarly, it is unclear if this monitoring is included in the cost estimate for the optimized remedial alternative for Parcel F. Please revise Section 5.2 to clarify if continuous climate change monitoring will occur as part of the optimized remedial alternative for Parcel F. If so, please ensure the costs associated with the continuous climate change monitoring are included and/or referenced.
8. **Table 1, Ecological Risk Assessment Summary, Risk Drivers:** Please revise the table to include units in the table and to provide/reference to the source of these values.

9. **Table 2, Updated Human Health Risk Assessment Summary Risk Drivers and Table 3, Preliminary Remediation Goal Summary:** Information to support the values presented in Tables 2 and 3 are not provided and/or referenced. Specifically, source documents for the values presented are not included as footnotes. Please revise Tables 2 and 3 to provide and/or reference information to support the values presented.